



Eskom submission to the Portfolio Committee on Public Enterprises

Briefing on

Recovery Plan and progress with the unbundling of Eskom into three independent entities

3 June 2020

## Summary

The deterioration of Generation plant performance has resulted in insufficient available capacity to meet the country's electricity demand, resulting in implementation of load shedding to protect the integrity of the national grid.

The underlying cause of this situation is the running of an ageing fleet at exceptionally high energy utilisation with minimal performance improvement maintenance due to capacity and financial constraints compounded by late delivery of new and unreliable capacity in the form of Ingula, Medupi, and Kusile Power Stations.

In order to turn around the declining performance in electricity generation, Eskom developed the 9-Point Recovery Plan, focusing on addressing the immediate to short-term performance challenges, while a longer-term plan was being developed to ensure sustainability.

The 9-Point Recovery Plan focused on addressing issues related to the new plant, unit trips, units on long-term forced outages, partial losses and boiler tube leaks, outage duration and slips, human capital, preparation for increased Open-Cycle Gas Turbine (OCGT) usage, reducing emissions, and coal management.

The Eskom Turnaround Strategy is underpinned by three pillars, with supporting sets of actions and strategic initiatives, to STABILISE, OPTIMISE, and GROW the business. The first phase of the OPTMISE pillar will divisionalise the business, entrenching transparency and accountability to drive optimisation of the business capability. Eskom has achieved most of the 2019/20 targets for divisionalisation as set in the "Roadmap for Eskom in a Reformed Electricity Supply Industry" ("Roadmap").

This report will provide the state of system performance, progress with the 9-Point Recovery Plan as well as progress in the unbundling of Eskom into three entities to the committee.

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**Acronyms and abbreviations (used in the document):**

<b>AEL</b>	:	Atmospheric Emission Licence
<b>DHP</b>	:	Dust Handling Plant
<b>EAF</b>	:	Energy Availability Factor
<b>EPRI</b>	:	Electric Power Research Institute
<b>ERI</b>	:	Eskom Rotek Industries
<b>ESP</b>	:	Electro Static Precipitators
<b>FTC</b>	:	Fixed-Term Contractor
<b>HFPS</b>	:	High Frequency Power Supply
<b>MHPSA</b>	:	Mitsubishi Hitachi Power Systems Africa
<b>MW</b>	:	Megawatt
<b>OCGT</b>	:	Open-Cycle Gas Turbines
<b>OCLF</b>	:	Other Capability Loss Factor
<b>OEM</b>	:	Original Equipment Manufacturer
<b>P80</b>	:	Risk-adjusted project schedule, where 80% of the project risks are forecasted to be realised
<b>PCLF</b>	:	Partial Capacity loss Factor
<b>PLL</b>	:	Partial Load Loss
<b>PMO</b>	:	Project Management Office
<b>RMRSC</b>	:	Reliability Maintenance Recovery Steering Committee
<b>RMDC</b>	:	Remote Monitoring and Diagnostic Center
<b>RTS</b>	:	Return to Service
<b>UCLF</b>	:	Unplanned Capacity Load Factor

## 1. Update on Generation Recovery Plan

### 1.1 Overview of Eskom system performance

- The impact of COVID-19, and especially the lockdown, has reduced demand by an average of 6 000 MW up to a maximum of 11 000 MW.
- This has created the opportunity to execute additional short-term maintenance to address emergent issues, including those that are contributing to partial load losses (PLLs).
  - Planned maintenance has roughly doubled to more than 9 000 MW on occasion.
- This also significantly reduced the need for OCGT usage.
  - In the first 28 days of April 2020, R22,2 million was spent on OCGT fuel, with a load factor of 0,34%.
  - In FY2019/20, R2,67 billion was saved on OCGT fuel as opposed to the provision of R6,98 billion.
- On the other hand, the lockdown and COVID-19 related restrictions have meant that some reliability outages have had to be delayed.
- In particular, Koeberg Unit 2 was placed in cold reserve in April 2020 in order to delay the start of its next refuelling outage to:
  - allow the unit to be available when most needed in the months after lockdown (June or July); and
  - improve the certainty for required international resources (specialists and spares) to arrive.
- Eskom has plans in place to gradually ramp up its power stations in line with government's risk-adjusted COVID-19 strategy.

## The impact of COVID-19 lockdown

The graph indicates the impact of the lockdown on the electricity demand of the country.

The black line is the three-month demand forecast with the red line being the actual demand of the country experienced since lockdown Level 5. It is very clear that there has been an increase in demand since Level 4 lockdown was introduced. The green shaded area indicates the difference between forecasted demand versus actual demand. The blue line is now the new forecasted demand until the end of June 2020.

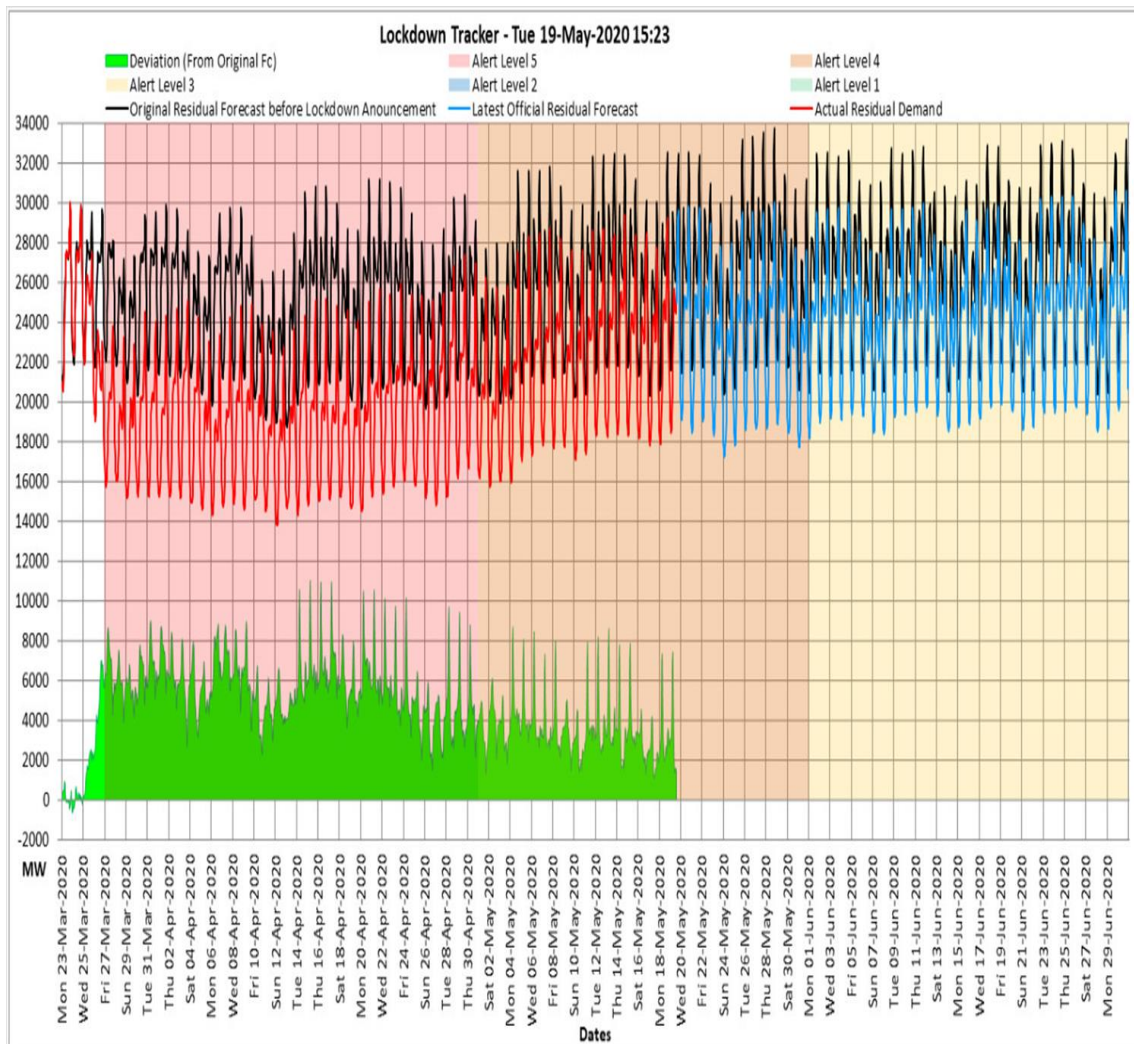


Figure 1: Lockdown tracker

## Quick wins targeted and achieved during lockdown

- ✓ Maintenance increased from 3 600 MW, prior to national lockdown, to 9 800 MW in the second week of April 2020;
- ✓ Currently, 6 776 MW capacity is being maintained against a pre-lockdown plan that averaged 4 200 MW;
- ✓ PLLs target reduction from 4 615 MW to 2 638 MW, an improvement of 1 977 MW in available capacity; and
- ✓ Due to the above, the resulting base case scenario after lockdown shows an improvement from an envisaged 31 days of Stage 1 load shedding to three days during the winter period (P80).
  - It is important to recognise that due to the unreliability and unpredictability of the system, the risk of load shedding remains.
  - This will be the reality until after the 18 months of reliability maintenance, which will last until August 2021.

## 1.2 Performance review from February 2020 to May 2020

While the FY2019/20 year-to-date (YTD) performance is following seasonal trends, the unplanned losses are higher than targeted, but reducing.

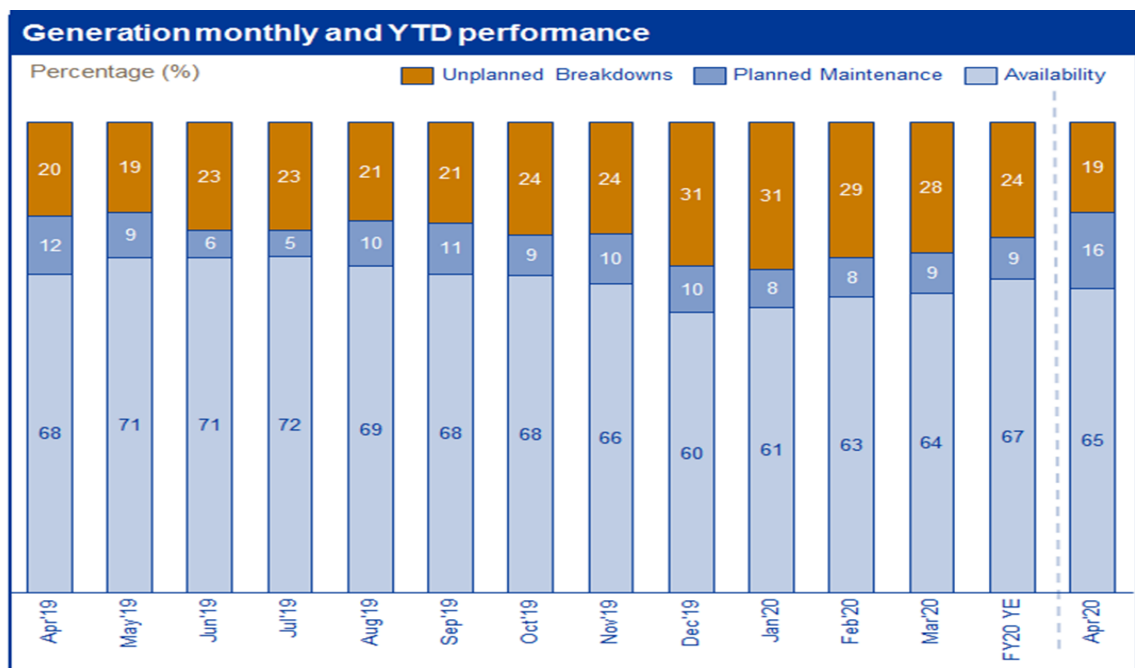


Figure 2: Generation monthly and YTD performance

### Key insight:

- EAF improved slightly in March 2020, with a small reduction in UCLF.
- During the year, a delicate balance was required in giving the plants an opportunity for planned maintenance and the having the plants available to support the system.
- The national lockdown has allowed space for extra maintenance, which is being optimised.
- PCLF so far in April, at 17%, is roughly double that of previous months.

**PLLs, full load losses, slips, and major incidents have been the biggest contributors to the unplanned losses.**

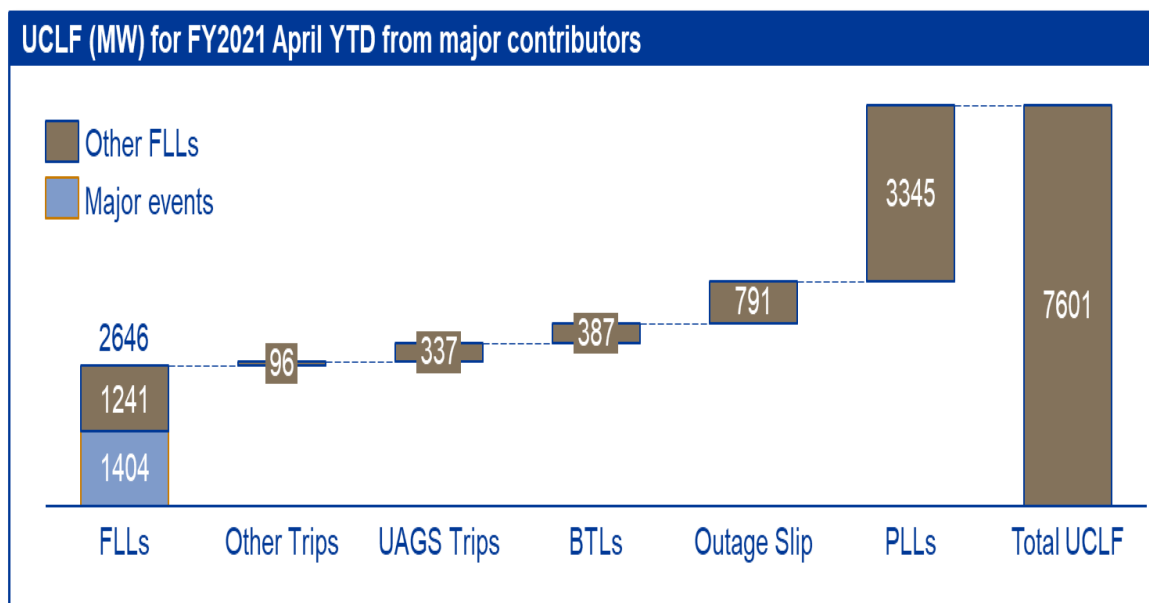


Figure 3: UCLF (MW) for FY2020/21 April YTD

### Key insights:

- PLLs continue to be the biggest contributor to UCLF for FY2021 YTD.
- The lower demand, since the COVID-19 lockdown, has enabled Eskom to execute additional short-term outages, mainly focusing on emergent issues to address PLLs.
- This will enable the Generation fleet to be in a better situation once the demand picks up as lockdown restrictions are incrementally lifted.



- In April 2020, PLLs have so far reduced from the FY20 annual average of 10,6% (4 651 MW) to 7,7% (3 345 MW).
- Although some of this improvement is due to units in cold reserve, there have been gains due to the increase in planned maintenance to address PLLs.
- Major events were attributed to the following three units: Tutuka Units 1 and 3 and Kendal Unit 5.

### **Camden Ash Dam risk**

- During April 2020, we took a decision to shut Camden Power Station down in response to an assessment we had undertaken on the status of the ash dam;
- Generation had been tracking the status of the ash dam for several months, and reduced Camden output as ashing limitations increased;
- Camden is not expected to return to operation until after the winter;
- Critical maintenance is undertaken while station is shut;
- All technical principles to safeguard and preserve units applied; and
- Review of other ash dams is underway.



Figure 4: Camden Ash Dam

## Emissions poor performance has been mainly due to Kendal Power Station.

Kendal Power Station has been operating in non-compliance in terms of the Atmospheric Emission Licence (AEL) since January 2018 on several and, at times, on all units. There has been some improvement in overall emission performance, this is primarily influenced by improvements on the dust handling plant and taking Unit 5 out of service to implement significant remedies.

Kendal Power Station has developed and is in the process of executing a recovery plan to ensure that all six units at Kendal operate within the emission limit of 100mg/Nm<sup>3</sup>.

Stream	Progress to date
<div>8</div> <div>Reduce Emissions</div>	<p><u>We have done the following:</u></p> <ul style="list-style-type: none"><li>- Unit 1 – 14 day outage focusing ESP and DHP repairs, ESP Washing. The unit is currently compliant, correlation tests also completed (Feb 2020)</li><li>- Unit 2 – 14 day outage focusing ESP and DHP repairs, ESP Washing. The unit is currently compliant. Correlation tests also completed (Jan 2020)</li><li>- Unit 3 – 22 day outage focusing ESP and DHP repairs, ESP Washing (April 2020), the unit currently being optimized after outage, to be completed end May 2020</li></ul> <p><u>Currently doing the following:</u></p> <ul style="list-style-type: none"><li>- Unit 5 is on long duration outage for ESP field replacement and DHP repairs, return to service date is April 2021</li><li>- Unit 6 – 22 day outage focusing ESP and DHP repairs, the Unit RTS date is end May 2020 – correlation tests to be done</li><li>- EPRI is currently reviewing our 100mg/Nm<sup>3</sup> action plans (Phase 1)</li></ul> <p><u>The following is on the plan:</u></p> <ul style="list-style-type: none"><li>- Initiated forensic investigations into emissions reporting</li><li>- Unit 4 – 22 day outage to be executed for ESP and DHP repairs and unit optimised</li><li>- EPRI is supporting to develop 50mg/Nm<sup>3</sup> action plans (Phase 2)</li></ul>

Figure 5: Emission poor performance in Kendal Power Station

### 1.3 Progress with existing 9-Point Recovery Plan

The plan covers load losses, coal stock, people issues, and preparation for adverse circumstances and is aligned to the Maintenance Recovery Project.

Below is the illustration of the 9-Point Recovery Plan:

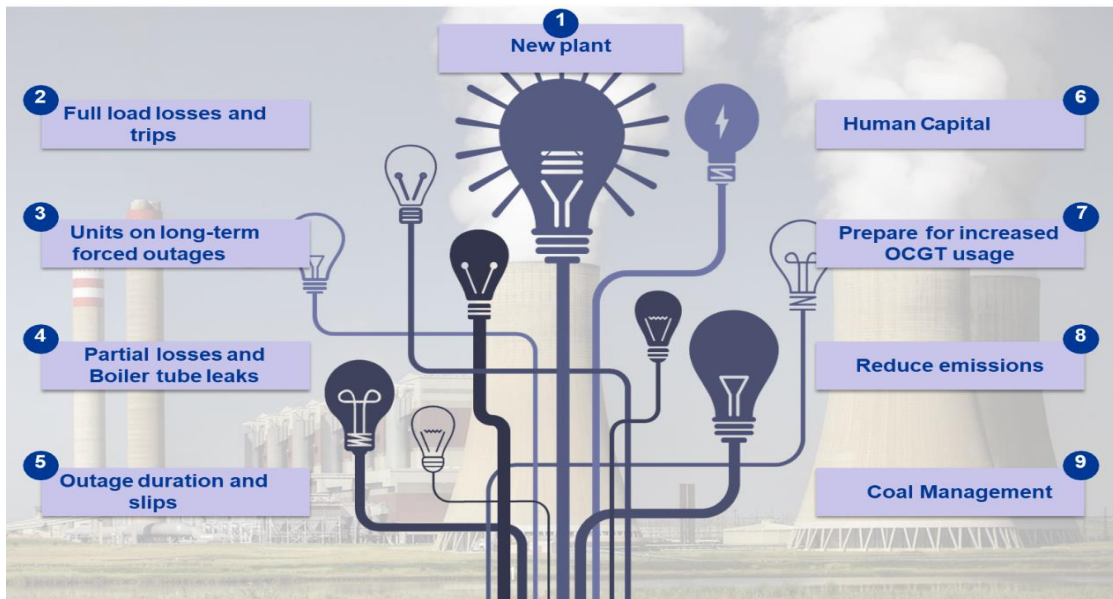


Figure 6: 9-Point Recovery Plan

Since inception, the following progress has been made on the recovery plan by various streams:




Stream	Status in November 2018	Progress to date
<b>1</b>  <b>New plant</b>	<ul style="list-style-type: none"> <li>Steercom between Eskom and MHPSA has been established</li> <li>Design defects at Kusile and Medupi have been identified</li> </ul> 	<ul style="list-style-type: none"> <li>Ingula dual load rejection defect resolved, units at full load</li> <li>Technical solutions have been agreed between Eskom and MHPSA for the boiler defects at Medupi and Kusile</li> <li>The technical solutions were implemented on Medupi Unit 3 during the 75 day shutdown</li> <li>Medupi unit 6 is currently shutdown while Medupi units 2, 4 &amp; 5 and Kusile unit 3 are to implement similar technical solutions in FY21</li> </ul>
<b>2</b>  <b>Unit trips</b>	<ul style="list-style-type: none"> <li>The trip performance remains a challenge. Top 4 contributing power stations (Duvha, Kriel, Majuba, Tutuka) to develop and implement a trip reduction strategy customised for their sites to address performance gaps.</li> </ul>	<ul style="list-style-type: none"> <li>FY20 trip performance was 593 compared to a target of 560</li> <li>Tutuka was the largest contributor to trips and showed the biggest improvement by March '20</li> <li>The implementation plans for the Top 4 Power Stations have been assessed &amp; in execution with KPIs to monitor progress, trip investigation support and improvements to unit testing</li> <li>Focus extending to New Build and Matla</li> </ul>

Figure 7: Progress on Stream 1 and 2 of the Recovery Plan

Stream 3 Units on long-term forced outages			
<span>●</span> Assessment phase <span>●</span> Progress in line with plan <span>●</span> Progress at risk <span>●</span> Returned			
Description	Status/progress		
<b>Lethabo Unit 5 (600MW)</b>	<ul style="list-style-type: none"> <li>High Pressure steam pipe failure on 10 October 2018</li> <li>The High Pressure pipework completed, busying with extensive commissioning</li> </ul>	Returned	<span>●</span>
<b>Duvha Unit 4 (600MW)</b>	<ul style="list-style-type: none"> <li>On 23 August 2017, turbine tripped on generator stator earth fault – returned on 06 Nov 2018 but was shut down again to address a Generator H<sub>2</sub> leak</li> </ul>	Returned	<span>●</span>
<b>Grootvlei Unit 2 (200 MW)</b>	<ul style="list-style-type: none"> <li>Auxiliary steam range pipe burst on 26 January 2018</li> <li>Also experienced generator issues</li> <li>Initial delay due to funding constraints</li> </ul>	Returned	<span>●</span>
<b>Kriel Unit 2 (600MW)</b>	<ul style="list-style-type: none"> <li>Stator earth fault on 03 May 2018</li> </ul>	Returned	<span>●</span>
<b>Matla Unit 5 (575MW)</b>	<ul style="list-style-type: none"> <li>Cold reheat non return valve leak experienced on 05 February 2019</li> </ul>	Returned	<span>●</span>
<b>Duvha Unit 1 (600MW)</b>	<ul style="list-style-type: none"> <li>Generator Stator fault on 17 Jul 2019</li> <li>Stator rewind completed, busy with commissioning activities</li> </ul>	Returned	<span>●</span>
<b>Duvha Unit 3 (600MW)</b>	<ul style="list-style-type: none"> <li>Outcome of legal action pending finalisation</li> </ul>	To be confirmed	<span>●</span>
<b>Kendal Unit 5 (640MW)</b>	<ul style="list-style-type: none"> <li>Emission plant refurbishment outage that will include a major General Overhaul</li> </ul>	RTS April 2021	<span>●</span>

Figure 8: Progress on Stream 3 of the Recovery Plan


Stream	Status in November 2018	Progress to date
<b>4</b> <b>Partial losses (PLLs) and Boiler tube leaks</b>	<ul style="list-style-type: none"> <li>Year to Date partials were 4 215 MW</li> <li>Boiler tube failure reviews in progress in progress</li> </ul>	<ul style="list-style-type: none"> <li>Major PLL improvements projects with long supply lead times close to finalisation for cooling towers and feedwater heaters</li> <li>The Boiler Tube Leak Reduction Program reviews have been completed for all stations</li> <li>Potential reduction of &gt; 2 000 MW from short-term opportunity maintenance into the winter period, with a further 2 000 MW opportunity from the outage plan post winter to the end of FY21</li> </ul>
<b>5</b> <b>Outage duration and slips</b>	<ul style="list-style-type: none"> <li>Engineers <b>identified to be redeployed</b> to power stations</li> <li>Developed plan to focus on <b>ERI performance</b> – enabling contracts, skills, spares and quality management &amp; <b>Maintenance Recovery</b></li> </ul> <div>  <div> Upfront planning    Outage readiness    Execution quality </div> </div>	<ul style="list-style-type: none"> <li><b>Outages</b> are currently a <b>key focus</b> for the ERI performance improvement. The <b>Outage steering committee</b> was set up to look into the area of improvement.</li> <li>Rotek has entered into partnership agreements with <b>multinational OEMs and international companies</b> to support with outage execution and technical support on the turbine centreline</li> <li>Maintenance recovery will focus on specific priority FY2021 philosophy outages with enabling contracts in place, improved scoping and execution oversight.</li> </ul>

Figure 9: Progress on Stream 4 and 5 of the Recovery Plan



Stream	Status in November 2018	Progress to date
<b>6</b> <div>Human Capital</div>	<ul style="list-style-type: none"> <li>Identified critical vacancies and skills gaps at power station management, operations and maintenance areas</li> </ul> 	<ul style="list-style-type: none"> <li><b>1384 of the 1 852</b> critical positions identified were filled by April 2020</li> <li>All the <b>Power Station General Managers</b> and <b>Tier 1 Manager</b> positions have been filled</li> <li><b>204</b> of Eskom qualified Learner Plant Operators have been appointed to date.</li> <li>Engineering resources have been deployed to power stations to build technical capacity and experience.</li> </ul>
<b>7</b> <div>Optimise OCGT usage</div>	<ul style="list-style-type: none"> <li>Tank levels for diesel were low with constrained supply and excessive usage</li> <li>Finance developed plan to secure supply of diesel</li> </ul> 	<ul style="list-style-type: none"> <li>Actual spend for the 2020 financial year was R 4.3bn against a provision of R 6.98bn with actual average load factor of 6.28%</li> <li>Average tank levels are currently above 95%</li> <li>Contracts for supply and storage finalised with focus in FY21 to optimise diesel usage from 7% load factor to about 5%</li> </ul>

Figure 10: Progress on Stream 6 and 7 of the Recovery Plan

Stream	Status in November 2018	Progress to date
<b>8</b> <div>Reduce Emissions</div>	<ul style="list-style-type: none"> <li>Eskom delays to implementing emission retrofit projects within committed timelines could lead to medium term risk of 9 000 MW</li> <li>Non-compliance with Atmospheric Emission License limits could lead to a short term risk of 6 633 MW</li> </ul>	<ul style="list-style-type: none"> <li>Focus on 10 of the 87 generation units where emissions are high - a potential risk of 6 633 MW</li> <li>Contracts have been placed for Lethabo and Tutuka High Frequency Power Supply (HFPS) and Tutuka dual conditioning pilot plant</li> <li>In process of tender evaluation for Tutuka low NOx burners, Fabric filter plant for 3 units and Kendal HFPS</li> <li>Internal approvals obtained for Lethabo and Kriel SO3 and ESP's</li> <li>Performance for the past two years has been poor at 0.48kg/MWh sent out, this is mainly due to Kendal's poor performance.</li> <li>February and March 2020 showed promising improvement at 0.33kg/MWh sent out, this trend is expected to continue with improvement at Kendal</li> </ul>
Continuous engagement with Department of Environment, Forestry and Fisheries (DEFF)		

Figure 11: Progress on Stream 8 of the Recovery Plan



	Status in November 2018	Progress to date
<b>Challenge</b>	<ul style="list-style-type: none"> <li>10 stations below Grid Code Requirement</li> <li>5 of the 10 stations below 10 days</li> </ul>	<ul style="list-style-type: none"> <li>No power station below the Grid Code requirement or below the Eskom prescribed minimum level</li> </ul>
<b>Stations impacted</b>	<ul style="list-style-type: none"> <li>Arnot, Tutuka, Majuba, Matla, Kriel, Camden, Duvha</li> </ul>	<ul style="list-style-type: none"> <li>Significant improvements with the stock days recovery were achieved. All Power Stations are at their Eskom prescribed Expected Levels</li> </ul>
<b>Stock pile levels</b> *Excl. Medupi & Kusile	<ul style="list-style-type: none"> <li>Actual stock days 22 days</li> </ul>	<ul style="list-style-type: none"> <li>&gt; 55 days as at middle May 2020</li> <li>The plan is to manage the Total System average stock to not less than 37 days</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>In the light of the COVID-19 pandemic, mines, transporters and other suppliers in the coal supply value chain are operational. Should the suppliers' employees be infected, supply from the respective mines would be at risk, however the risk is being managed</li> </ul>	
<b>Coal Quality</b>	<ul style="list-style-type: none"> <li>Good progress regarding initiatives to reduce coal quality related OCLF was made over the latter part of FY20. High levels of load losses started reducing from December. Kriel and Matla combined accounted for 75% of total coal related OCLF which will remain the focus of the team. The FY20 coal related OCLF was 0.75%</li> </ul>	

Figure 12: Progress on Stream 9 of the Recovery Plan

## Maintenance Recovery Project

The Maintenance Recovery Project aims to improve EAF, drive midlife refurbishment and reliability maintenance. The following has been achieved:

- ❖ Achieve EAF targets of 70% in FY2021, 72% in FY2022, and 74% in FY2023.
- ❖ Achieve saving targets in line with the financial sustainability targets.
- ❖ Clear out all midlife refurbishment and reset reliability maintenance.
- ❖ Ensure a sustainable recovery by focusing on drivers, which include health indicators, maintenance, and operations excellence.

## **Update on current activities for April and May 2020**

- **Reliability Maintenance Recovery Steering Committee (RMRSC)**
  - Terms of reference (TOR) approved in the April 2020 Steering Committee meeting.
  - Eleven Power Station Implementation Committees approved in the April 2020 Steering Committee meeting.
  - Implementation Committee's kick-off in May 2020 after TOR approval at RMRSC.
- **Power station visits**
  - All 11 power stations in scope visited – including the RMDC.
  - No delay in progress during the lockdown period.
- **Project office's roll-out (11 power stations)**
  - Cluster and Power Station General Managers' approval obtained.
  - Risk review to be conducted in May 2020 at all power stations.
- **Reliability maintenance schedule**
  - Outage schedule updated weekly in line with lockdown.
  - The outage scope will be locked down for 12 months to execute the outages.
  - Risk review in progress to address possible mitigation factors.
- **Original equipment manufacturers (OEMs)**
  - Contracts concluded in May/June 2020.
  - Contractors on site D-Day 1 July 2020.
- **Reliability maintenance scope (power stations)**
  - Arnot, Duvha, Kendal, Kriel, Kusile, Lethabo, Majuba, Matimba, Matla, Medupi, and Tutuka.
- **HR appointment progress project offices**
  - Human Resources manages this process as a project to be completed in July 2020.
  - Group Technology and Group Capital resources to be identified first for possible placements.

- Regrouping the PMO structure to support project offices at each power station.
- External fixed-term contractors (FTCs) to be awarded a maximum of 15 specialised resources for three years.
- **D-Day 1 July 2020**
  - Take over all outage scopes to be executed in accordance with lockdown plan for 12 months.
  - Do risk review to determine the load shedding impact for three months.
- **D-Day – 30 on 1 June 2020**
  - All resource allocations for project structure to have identified names.
  - All risk reviews to be completed and to start final preparation for Day 1.
  - All implementation committees at power stations to be active biweekly.
- **Communication plan**
  - Communication plan being drafted to address Day 1 of Recovery Programme.
  - Organised labour communication to be approved in May 2020 by s committee.
  - External communication plan to be approved in April 2020 by steering committee.

#### **1.4 Generation reliability lockdown maintenance plan (March to August 2020)**

Eskom planned 31 reliability maintenance outages – a total of 14 270 MW – for the period March 2020 to August 2020.

Due to the lockdown, 10 of these outages were shifted out while four new ones were included to respond to the lockdown.

The lockdown has provided the opportunity to conduct additional short-term urgent maintenance outages, which will greatly contribute to available capacity for the winter period.



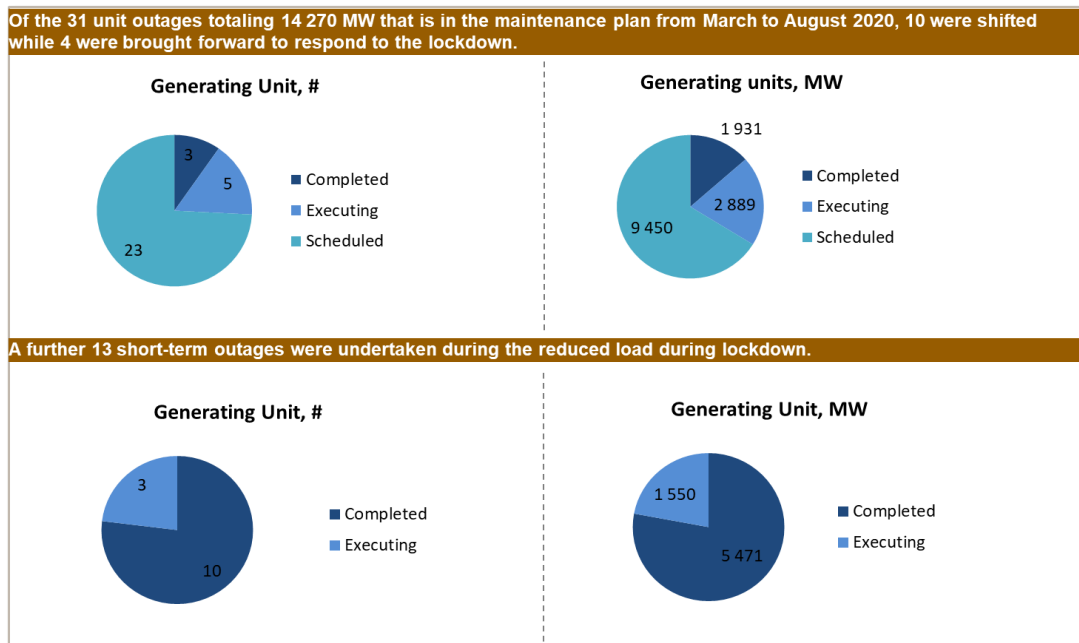


Figure 13: Generation maintenance plan

PLL benefits realised from ongoing short-term maintenance during lockdown

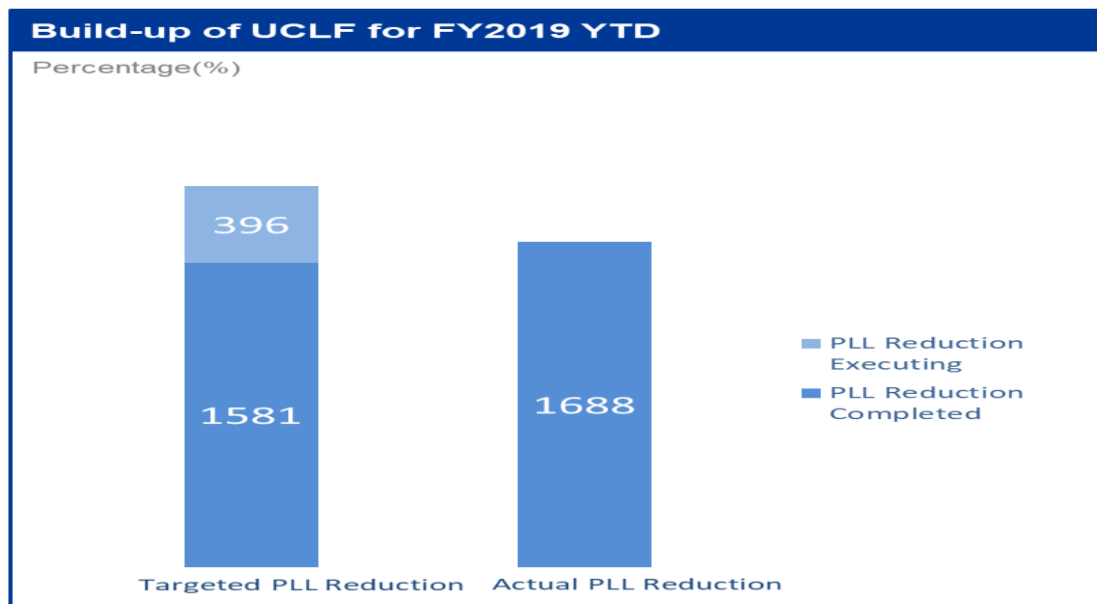


Figure 14: Building-up of UCLF for FY2019 YTD

Key insight:

- Three planned maintenance and 13 short-term maintenance outages were scheduled since the start of lockdown;

- These 16 outages had a cumulative opportunity of 1 977 MW PLLs to be cleared of which 1 688 MW (assessed in the first week of May) have been realised from completed and returned units; and
- Remaining units are likely to ensure that the full target of 1 977 MW will be achieved and possibly exceeded.

### Capacity outlook December 2019 to March 2021 – before lockdown

The graph below indicates the capacity outlook before the lockdown period. The black line is the forecasted demand, the light blue shaded area the available capacity, the pink area the available gas capacity, the yellow area the untouchable reserve to ensure system integrity, the green area the planned outages, and the orange area the unplanned breakdowns and system losses.

It clearly indicates a significant amount of diesel usage and load shedding.

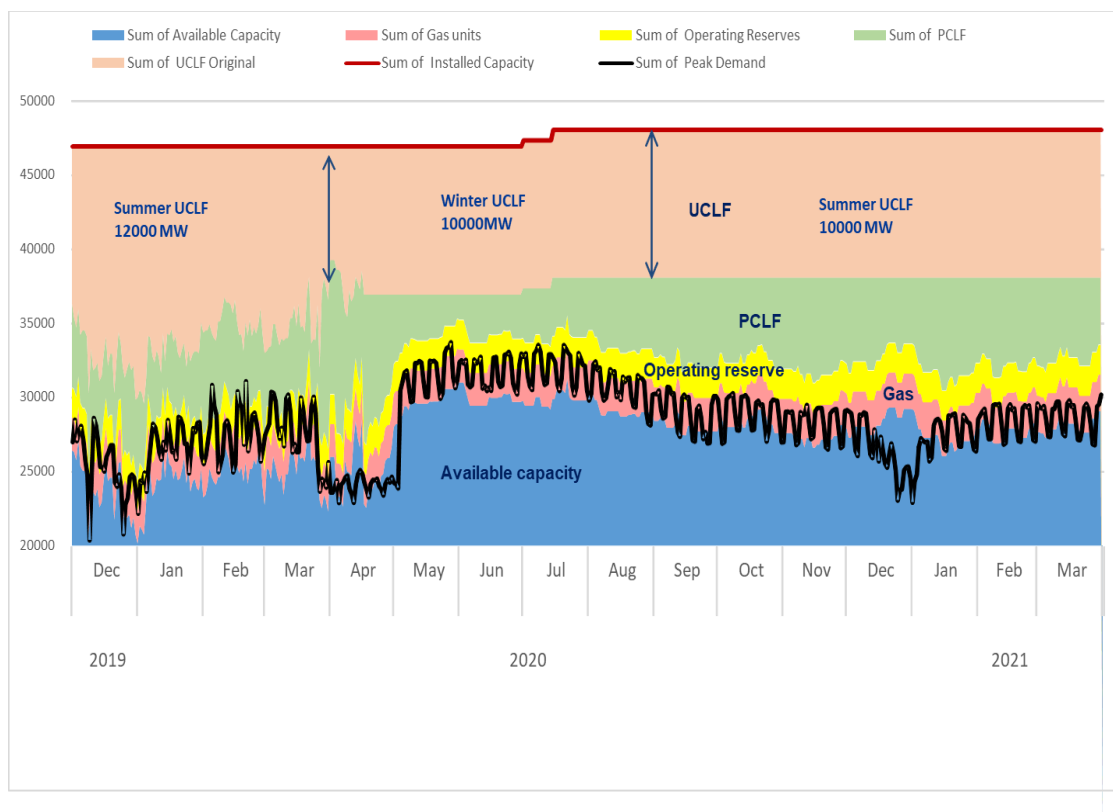


Figure 15: Capacity outlook before lockdown

## Capacity outlook December 2019 to March 2021 – after lockdown

The graph below indicates the capacity outlook after the lockdown period with the positive impact of the short-term urgent maintenance. It is important to state that this outlook is, should Eskom be successful in limiting the unplanned breakdowns and system losses below 7 000 MW. This is a very optimistic scenario based on the fact that the Generation system remains unpredictable and unreliable due to more than a decade of neglect.

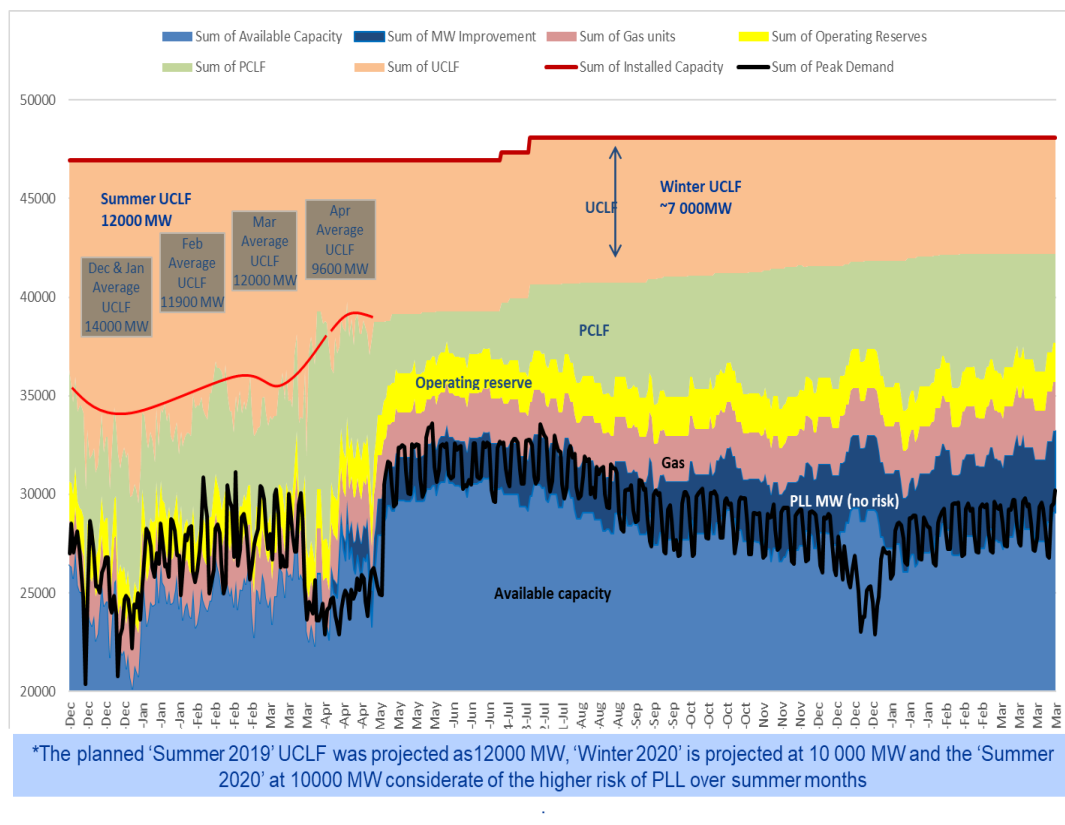


Figure 16: Capacity outlook after lockdown

## Winter 2020 system status outlook

The current outlook is three days of Stage 1 (1 000 MW) load shedding during the month of July 2020 where the demand is forecasted to be approximately 33 600 MW should Eskom be in a position to limit the unplanned breakdowns and system losses to below 11 000 MW. This is based on 80% probability.

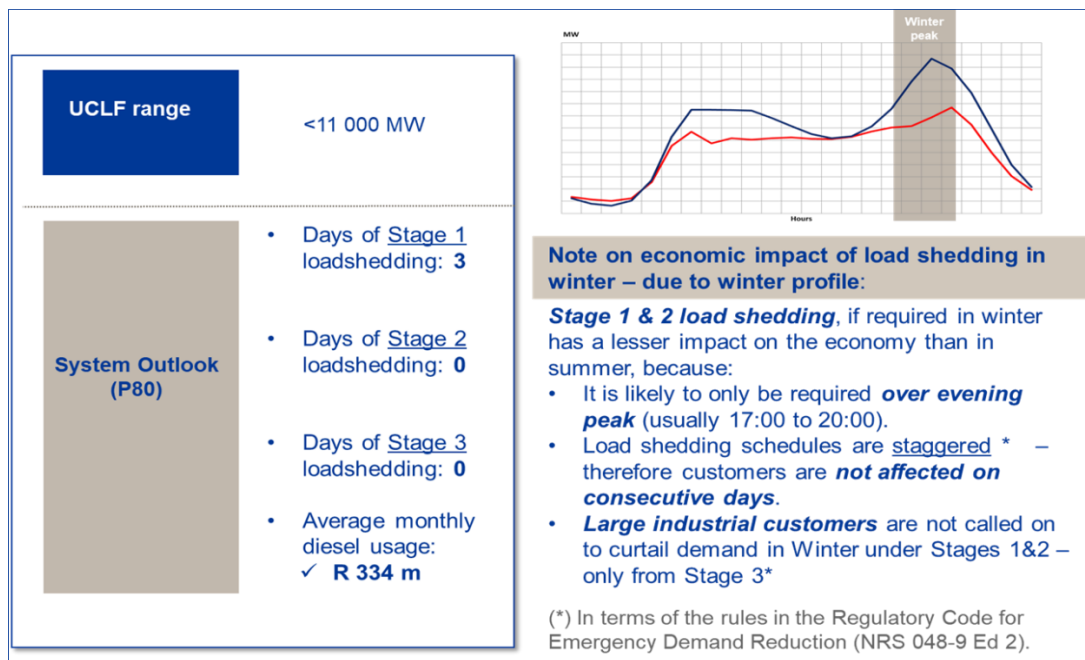


Figure 17: Winter 2020 system status outlook

## The next steps

- The focus on increasing **short-term maintenance**, especially to address PLLs, during the lockdown will improve Eskom's ability to meet the gradually increasing demand as the lockdown restrictions are incrementally lifted.
- Approximately **2 000 MW of PLLs** will be recovered in time for the winter peak demand.
- Some **reliability maintenance** has had to be deferred due to lockdown restrictions and this will have to be incorporated into the capacity plan in future months.
- Due to the **uncertainty** of the rate at which **lockdown restrictions** will be lifted and thus the increase in demand, Eskom is evaluating various scenarios and plans are in place to ensure flexibility in our ability to ramp up as required.
- There is **6 776 MW of capacity being maintained** in addition to the pre-lockdown plan by short-term maintenance intervention.
- PLLs** are to be reduced from 7 858 MW to 4 434 MW until March 2021, an improvement of 3 424 MW in available capacity.

- **Commitments signed** by power station managers, Generation cluster managers. and GE (GX).
- Although the base case scenario (P80) after lockdown maintenance results in an **improvement from 31 days of Stage 1 load shedding to a possible three days**, it is important to recognise that due to the current unreliability and unpredictability of the system, the risk for load shedding remains.
  - This will be the **reality until after the 18 months of reliability maintenance**.

## 2. Progress in the unbundling of Eskom into three entities

### 2.1 Introduction

The Eskom Turnaround Strategy is underpinned by three pillars, with supporting sets of actions and strategic initiatives, to STABILISE, OPTIMISE, and GROW the business. The first phase of the OPTMISE pillar will divisionalise the business, entrenching transparency and accountability to drive optimisation of the business capability. The role of the corporate centre will be that of functional leader, where strong direction is given and policies are set. Where there are economies of skill and scale, servicing functions will be provided.

Eskom has achieved most of the 2019/20 targets for divisionalisation as set in the “Roadmap for Eskom in a Reformed Electricity Supply Industry” (“Roadmap”), and the high level achievements were as follows:

- ✓ A total of 8 890 employees relinked to the operating divisions, of whom 6 500 are from head-office functions. The volume of staff relinked enables the line divisions to function separately. Any further, relatively fewer changes in future will be to align with business and operating models once they are completed.
- ✓ Appointed Divisional Managing Directors.
- ✓ Established Boards for all three Eskom divisions.
- ✓ Appointed Board members for all three Eskom Divisional Boards.

- ✓ Created income statements, balance sheets, and cash flow statements for the divisions.
- ✓ Creating the first step of the market operator and central purchasing agency by contracting between Generation, Transmission, and Distribution. Internal trading between the divisions is in place. This was done by setting up a trading simulation, internal transfer pricing, and the balancing mechanism. **It should be noted that external contracts form part of the legal unbundling scope, which is premised on regulatory and policy changes that will be spearheaded by government.**

In addition the Board has appointed a Strategy Subcommittee whose brief includes oversight of the Roadmap implementation.

## 2.2 Eskom Turnaround Strategy

The 2018/19 to 2020/21 Strategic Intent Statement (SIS), where the shareholder outlines strategic objectives, continues to set the direction for the Eskom strategy and the Turnaround Plan.

The SIS objectives, which are outlined below, have been integrated and are being executed as part of the three pillars of Eskom's Turnaround Strategy.

- Provide reliable, predictable, and affordable electricity in line with the approvals by, and the regulatory model of, the national energy regulator.
- Ensure and maintain a financially viable and sustainable company.
- Consolidate socio-economic contribution to ensure alignment with national transformation imperatives to unlock growth, drive industrialisation, and create employment and skills development.
- Reduce the impact on the environment through identifying, implementing, and/or supporting internal and external options for low-carbon-emitting generation, transportation, and opportunities.
- Ensure that the company structure is responsive to the changing energy landscape, including scenario planning based on price elasticity and demand elasticity for different customer groups.

- Submit annual strategy documents, a budget, and project plans/schedules for the Research and Development Unit, and report on progress, expenditure, and impact quarterly.
- Eskom's reporting should be done on a divisional basis, and the Group Capital expenditure overview should be in line with regulatory methodology.
- In addition, based on engagements with the Department of Public Enterprises (DPE), Eskom will continue to enhance and strengthen its governance processes.

Eskom's Turnaround Strategy continues to underpin and inform the FY2020/21 Corporate Plan, with a continued focus on debt relief, revenue management, cost containment, operational stability, and divisionalisation. The overall organisational strategy has been enhanced based on a revised set of assumptions, factoring in the current operating environment as well as addressing difficulties in executing the FY2020 Corporate Plan. Furthermore, it factors in the recommendations of the Presidential Task Team and the Ministerial Review Task Team, specifically towards achieving operational stability.

The FY2020/21 Corporate Plan will drive successful execution of Eskom's turnaround and will mobilise Eskom towards delivering the shareholder's Roadmap that was published in October 2019.

The strategy depicted in **Figure 18** below outlines a phased approach, taking Eskom towards a new, viable entity. The strategy is underpinned by three pillars, with supporting sets of actions and strategic initiatives, to **STABILISE, OPTIMISE, and GROW** the business. These not only orientate the business activities in the short term, setting clear success measures, but also start preparing the business to ensure that South Africa Inc.'s electricity assets are leveraged for longer-term growth of the electricity sector and the economy. All three pillars will be actioned simultaneously, ensuring that short-term opportunities are leveraged and that risks are managed effectively.

The strategy rests on:

- the organisation being values-driven to embrace a high performance culture;
- successfully pursuing key advocacy initiatives; and

- cocreating a new electricity industry with stakeholders.

This should result in an Eskom that is agile and poised to deliver value as government continues to drive reform in the electricity supply industry.



Figure 18: Eskom Turnaround Strategy

The initiatives that underpin the **STABILISE** pillar focus on:

- driving operational stability, incorporating the actions stemming from the Ministerial Review Task Team;
- rehabilitating the income statement;
- strengthening the balance sheet;
- redressing the prevailing culture issues to transform Eskom towards a high performance culture;
- enhancing the efficacy of procurement and supply chain management (P&SCM) to enable effective financial stabilisation and utilising economies of scale to achieve cost optimisation, while pursuing supplier development and localisation; and



- improving governance, profitability, electricity supply reliability, attaining a cost-reflective tariff path, retaining existing customers, and attaining cumulative savings, debt relief, and improved receivables.

The **OPTIMISE pillar** ensures the alignment of the business and operating models in support of the DPE Roadmap for Eskom, with sustained focus on achieving the milestones outlined in the Roadmap. The first phase of action will **divisionalise** the business, entrenching transparency and accountability to drive optimisation of the business capability. Parallel to undertaking divisionalisation, **Eskom will commence with the preparatory work for legal unbundling**, as the second phase, so that it is ready to commence with implementation after the completion of divisionalisation.

The **GROW pillar** recognises that Eskom faces a rapidly changing energy market and positions the company to identify opportunities to prepare for growth. The new operating model will become a platform for growth readiness and enable Eskom to achieve efficiencies as well as quick and profitable returns.

## 2.3 Roadmap progress update

In line with the Roadmap, we report on progress by categorising into five broad timeline categories, namely:-

Table 1: Roadmap Deliverables

	Roadmap Deliverables	Roadmap Timeline	Eskom Timeline <sup>1</sup>
1	Divisional financials, organisational design, power purchase agreements and electricity supply agreements	Dec 2019	Mar 2020
2	Establishment of divisional boards and heads appointed	Mar 2020	Mar 2020
3	Support Systems and functions complete	June 2020	Dec 2021
4	Completion of "Divisionalisation" <ul style="list-style-type: none"> <li>▪ Transmission</li> <li>▪ Generation &amp; Distribution</li> </ul>	Dec 2020 June 2021	Mar 2022 Mar 2022
5	Completion of "Legal separation" <sup>2</sup> <ul style="list-style-type: none"> <li>▪ Transmission</li> <li>▪ Generation &amp; Distribution</li> </ul>	Dec 2021 Dec 2022	TBC TBC

### Notes:



1. Eskom timeline to be baseline going forward.
2. Implementation of Legal separation is after divisionalisation. A number of the processes required for legal separation are outside of Eskom's control.

## (1) and (2) Roadmap Update -Deliverables by 31 Mar 2020


 Complete 
  In progress 
  Delayed 
  Not started

Table 2: Roadmap Milestones

Milestone	Progress	Status
Divisional Financial reporting in place	<ul style="list-style-type: none"> <li>Income statement, cash flow statements and Balance sheet done for all divisions</li> <li>All statements based on financial allocations, system changes to reflect financials in ERP due end August 2020</li> </ul>	
Organisational design in place	<ul style="list-style-type: none"> <li>A total number of 8890 staff were moved, of the total, 6459 staff members moved from central functions to divisions, and 2431 staff members between divisions to ensure appropriate control and accountability.</li> <li>Revised structures were also created in the divisions to accommodate the movement of staff and the relevant delegations of authority to accommodate those staff in the divisions were created and approved.</li> <li>Business and operating models design underway - Functional leader model for the centre approved and being implemented.</li> <li>Corporate staff who previously serviced operating divisions from a centralised position are now reporting directly into divisions.</li> <li>The relinking of staff and related costs to divisions is done. Implementation of new operating models may require further staff movements, however this is expected to be minimal.</li> </ul>	
Power purchase agreements and electricity supply agreements	<ul style="list-style-type: none"> <li>The internal energy trading process has been reinstated inside Eskom, to enable full transfer pricing, together with corporate cost allocations to all the divisions.</li> <li>Internal Power Purchase Agreements (PPAs) and Energy Supply Agreements (ESAs) have been drafted, approved and signed between transmission, 27 power stations, distribution and Southern Africa Energy (SAE).</li> <li>Day ahead market simulation operational</li> <li>Balancing market is at advanced stage</li> <li>Trading governance committee charters developed</li> <li>Governance committee members</li> <li>Training on trader platform</li> </ul>	

Divisional Boards	<ul style="list-style-type: none"> <li>– The Boards of Transmission, Generation and Distribution have been established and are chaired by the Group Chief Executive of Eskom Holdings.</li> <li>– The Divisional Boards hold the division accountable on strategy implementation, business performance and functional compliance. They will also approve projects and changes in resources.</li> <li>– The boards are mandated to run the divisions as an independent businesses while aligning to the Group strategy under Eskom Holdings.</li> <li>– The boards have held two meetings to date.</li> <li>– The delegation of authority for the boards is being finalised (July 2020)</li> </ul>	
CEOs appointed	<ul style="list-style-type: none"> <li>– Aligned to the Eskom Memorandum of Incorporation (MOI), the MDs (not CEOs) have been appointed, and have bottom line accountability for the division</li> <li>– MDs are Exco members.</li> </ul>	




### (3) Roadmap Update -Deliverables by 31 Dec 2020


Milestone	Progress	Status
Support Systems and functions complete	<ul style="list-style-type: none"><li>– Eskom can execute on the people structures (re-linking) without risk.</li><li>– The Eskom ERP system i.e. SAP is however, highly integrated and requires more time to ensure that separate businesses are supported.</li><li>– Given state of IT infrastructure and extent of complexity, we plan to execute the system, data and processes ring-fencing and optimisation in 18 months.</li><li>– It must be noted that the timeline is still within Eskom's functional unbundling timelines.</li><li>– Feasibility study completed, user requirement assessed</li><li>– Obtained go-ahead to develop "re-use" solution to migrate PC &amp; CC linked objects</li><li>– Project Team established, development work started</li><li>– A financial conversion tool is being developed in the ERP system and is due for delivery end June 2020.</li><li>– Eskom is conducting a proactive analysis of the IT systems impacted by the separation in order to inform the detailed implementation plan.</li><li>– A detailed Roadmap is currently being drafted with an envisaged completion date of December 2021. Progress is on track.</li><li>– As-Is and To-Be Systems Analyses / Design</li><li>– To-be system analysis dependent on Operating Model</li><li>– Tx define sensitive information and how to ensure future independence</li><li>– IT resource risk – Panel contract process started</li></ul>	

#### **(4) Roadmap Update -Deliverables by 31 March 2022**

## Completion of Divisionalisation

[illegible]

Milestone	Progress	Status
b. Operating models	<ul style="list-style-type: none"> <li>The role of the corporate centre has been finalised, as that of a functional leader.</li> <li>Group functional heads report to ExCo members with functional responsibility and are accountable for the formulation and implementation of functional strategy and policy, as approved by the Board and Exco.</li> <li>Group support services provide economies of skill and scale. Support services are operated on business principles, with divisional representation on governance structures, to ensure cost and service discipline.</li> <li>Work on the associated RACIs (Responsible, Accountable, Consulted and Informed) has been completed and is being communicated and will then implemented</li> <li>Design divisions new operating models (Structure, grading, skills, governance, process, kpi's, systems &amp; data)</li> <li>Approval divisional &amp; holdings operating models</li> <li>Operating models timeline September 2020</li> </ul>	
c. Labour engagement	<ul style="list-style-type: none"> <li>Divisionalisation labour engagement roadmap drafted</li> <li>Engagement with relevant structures</li> </ul>	
d. Key activities in the critical path for divisionalisation	<ul style="list-style-type: none"> <li>Complete any residual staff relinking at Corporate – ongoing</li> <li>Complete Industry structure</li> <li>Complete baseline Business Models – July 2020</li> <li>Complete Operating models - November 2020</li> <li>As part of implementing Operating models, there may be requirements for further staff movements, training of staff etc and labour engagements (March 2021)</li> <li>Refinement to IT systems (June 2021)</li> <li>Refinements to trading systems in Transmission (June 2021)</li> <li>Complete prototyping and road testing towards achieving sustainable stand-alone businesses (March 2022)</li> </ul>	

<p>e. Programme Management</p>	<ul style="list-style-type: none"> <li>○ Change management</li> <li>○ Structures established to enable the turnaround include a Turnaround Management Office (TMO), Strategy development Project Management Office (PMO) and Divisional frameworks (Divisional Turnaround Steering Committees, Divisional Turnaround Programme Management Offices (PMOs), and various projects or streams).</li> <li>○ The TMO operates as a vehicle for the necessary oversight and management of key initiatives critical to achievement of the Eskom turnaround strategy.</li> <li>○ The TMO plays the role of an integration body across the other structures set up to implement and drive the turnaround; coordinate the scope, objectives, plans, resources and timelines across the programme; and track and communicate all matters relating to the Turnaround Plan.</li> <li>○ The position for the Turnaround Management Officer to direct the program has been advertised. Applications closed on the 22nd March 2020 and the appointment is imminent.</li> </ul>	
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## **(5) Roadmap Update –Deliverables Completion Date to be Confirmed**

### **Completion of Legal Separation**

<b>Milestone</b>	<b>Progress</b>	<b>Status</b>
a. Issues, Alignment and Communications	<ul style="list-style-type: none"> <li>– Formalised communications plan and pack with a clear Eskom view on timeframes, objectives etc. for internal and external communication on divisionalisation roadmap</li> <li>– Eskom commencement with the preparatory work for legal separation, as the second phase.</li> </ul>	
b. Preparation for legal separation	<ul style="list-style-type: none"> <li>– The process of outlining legal requirements will be completed by 30 September 2020 as envisaged in the Roadmap.</li> <li>– Industry and market rules being reviewed/ drafted</li> <li>– IT Systems &amp; data separation planning</li> <li>– IT Systems &amp; data separation execution</li> <li>– Additional activities required for completion being refined</li> <li>– Commencement of go-live support for divisions</li> <li>– Legal separation will commence after the completion of divisionalisation, once the required legal framework is in place and Eskom is financially sound</li> <li>– Outcomes include Market operator</li> </ul>	
c. Governments inputs	<ul style="list-style-type: none"> <li>– Alignment on roles for policy / regulatory industry regarding the development of an electricity market</li> <li>– Labour related matters- issues and how these will be managed (who, when etc) between Eskom and government</li> <li>– A formalised policy, tested with all relevant stakeholders</li> <li>– Approved market rules and Market Code</li> <li>– Approved pricing, subsidy and legacy cost models</li> <li>– Legal enablers determined and addresses: amended laws, regulations etc. e.g. ISMO Bill</li> <li>– A revised regulatory model, and capacitated NERSA</li> </ul>	



## **Conclusion**

- Eskom is faced with a number of challenges e.g. R450bn debt, declining revenue, increasing costs, operational challenges and an outdated business model.
- The strategic turnaround plan is a direct response to the challenges that will enable the road to recovery
- Despite major challenges in the past four months, Eskom has seen good progress in the Five Key Elements of the Turnaround
- Eskom has achieved most of the 2019/20 targets set in the Roadmap.
- Eskom took a decision to divisionalise as a cautious first step, in order to ensure that complexities are dealt with in a sustainable manner and the business is able to road test some of the ringfencing activities internally first.
- The balance of the Roadmap targets are in progress, however Eskom has extended the divisionalisation timelines.
- Legal separation will commence after the completion of divisionalisation, once the required legal framework is in place and Eskom is financially sound.
- The separation of the three businesses as subsidiaries under Eskom Holdings remains aligned to the Roadmap.